

# **ADOT Project TPD04-04**

## **Identification of Emissions Sources for Pinal County**

### **Project Summary**

Portions of Pinal County have been designated as nonattainment for both PM<sub>10</sub> and for SO<sub>2</sub>. Once EPA formally recognizes recent PM<sub>10</sub> measurements, the severity of Pinal County's nonattainment status will be increased and the County will be required to prepare plans that demonstrate how it will comply with the ambient air quality standards. Although the county is not currently identified as a non-attainment area for Ozone, elevated levels of Ozone concentrations have been observed at monitoring sites within the county, and there is concern about how growth in the county will affect Ozone concentrations in the future.

Given the inevitable transportation changes associated with impending growth in Pinal County, there is a need for a method to assess how corresponding emissions changes will affect PM<sub>10</sub> and Ozone concentrations at the monitor sites. The objectives of this research are to identify the sources that contribute to elevated PM<sub>10</sub> and Ozone monitor readings and to estimate the impact of future vehicle emissions from transportation growth patterns. The overall objective is to develop methods or models that can be used in Pinal County to adequately address air pollution problems in the county.

The research tasks needed to address the project objectives include the following:

- Collection of local travel activity data (e.g., speed, traffic counts, etc.),
- Development of an on-road emissions inventory,
- Collection of available monitoring and meteorological measurements,
- Selection of appropriate emissions and air quality models
- Estimation of the growth in emissions from future growth in travel activity and
- Development of an evaluation and forecasting tool for assessing PM<sub>10</sub> air quality impacts from unpaved road travel in the central portion of Pinal County.

Because Pinal County is not currently classified as an Ozone nonattainment area (for either the 1-hour or 8-hour standards) and considerable resources are required to operate photochemical models to evaluate the significance of Ozone precursor emissions, the air quality modeling portion of the study will focus on evaluating the impacts of PM<sub>10</sub> emissions from unpaved road travel on downwind receptors. Analysis of Ozone will be based on estimates of Ozone precursor emissions and not on estimates of Ozone concentrations.

The project team will also assess the cost and effectiveness of PM<sub>10</sub> control measures for unpaved road and the costs and benefits of technologically feasible measures will be incorporated into a tool for evaluating unpaved roads. This tool will be developed as a spreadsheet and designed for use by the County in identifying public unpaved roads having the greatest air quality impacts on existing or proposed residential areas and quantifying the costs and benefits of alternative emission control measures.